STUDY OF PLANTS OF CHECHARI VALLEY (MAHUADANR) USED BY TRIBES OF LATEHAR DISTRICT JHARKHAND

SYNOPSIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE

OF

DOCTOR OF PHILOSOPHY

IN SCIENCE

DEPARTMENT OF BOTANY

SUBMITTED TO

YBN University

Rajaulatu, Namkum, Ranchi-834010, Jharkhand, India

Year- 2024

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1. TITLE OF THE THESIS

STUDY OF PLANTS OF CHECHARI VALLEY (MAHUADANR) USED BY TRIBES OF LATEHAR DISTRICT JHARKHAND

2. INTRODUCTION

The Chechari Valley in Mahuadanr, located in the Latehar district of Jharkhand, is a rich ecological zone nestled within the Chotanagpur Plateau. This valley, largely inhabited by indigenous tribal communities such as the Oraon, Munda, Korwa, Brijia and Asur, is home to a variety of plant species that play an essential role in the cultural, medicinal, and economic lives of the local people. The tribal inhabitants have, over centuries, developed a deep understanding of the native flora and utilize plants in ways that reflect both traditional knowledge and ecological harmony. The study of plants used by these tribes reveals not only the biodiversity of the region but also the wealth of ethnobotanical knowledge that has been preserved through generations.

The tribal communities in Mahuadanr rely extensively on the forest for their livelihood and sustenance. Plants are used for a wide range of purposes—food, medicine, rituals, shelter, tools, and even dyes. Many of the commonly used plants are collected from the forests surrounding the valley and are used in their raw or minimally processed forms. For instance, tubers, wild fruits, and leafy vegetables are foraged and consumed as part of their daily diet. Edible plants such as *Colocasia esculenta* (arbi), *Dioscorea spp.* (yam), and *Centella asiatica* (brahmi) are highly valued for their nutritional benefits and are consumed both cooked and raw depending on the species.

One of the most significant aspects of plant use among the tribal groups is their application in traditional medicine. These communities have developed a system of herbal healing that is both sophisticated and effective. Plants like *Terminalia arjuna*, *Azadirachta indica* (neem), *Andrographis paniculata* (kalmegh), and *Tinospora cordifolia* (giloy) are used to treat common ailments such as fever, stomach disorders, skin infections, and respiratory problems. For example, the bark of *Terminalia arjuna*

is ground into a paste and taken with water to treat heart-related conditions. Neem leaves are boiled and used for bathing to cure skin diseases, while giloy is often consumed as a juice to boost immunity and combat chronic fevers.

Apart from their medicinal uses, plants in Chechari Valley also have deep cultural and spiritual significance. Certain trees like the *Ficus religiosa* (peepal) and *Butea monosperma* (palash) are considered sacred and are central to tribal rituals and festivals. Leaves, flowers, and bark are used in religious offerings and ceremonies. The knowledge of which plant to use, how to prepare it, and when to harvest it is passed down orally from elders to younger generations, often through storytelling and practical demonstrations, ensuring the continuity of this traditional wisdom.

The valley also supports a variety of plants used for crafting and construction. Bamboo is widely used for making household items, agricultural tools, and shelters. The *Shorea robusta* (sal) tree is another critical resource; its wood is used in construction, while its leaves are stitched together to make eco-friendly plates and bowls. These products are not only used locally but are sometimes sold in nearby markets, contributing to the local economy. In addition, plant-based dyes are extracted from species like *Bixa orellana* (annatto) and *Curcuma longa* (turmeric), which are used in body art and textile decoration, especially during festivals and weddings.

A study of the plants used in Chechari Valley also highlights the ecological awareness among the tribes. Sustainable harvesting techniques are often employed to ensure that plant populations are not depleted. For instance, only mature plants are harvested, and roots or bark are often partially removed so that the plant can regenerate. This approach reflects a long-standing understanding of conservation, even in the absence of formal environmental education. The tribal belief that harming nature invites misfortune further reinforces sustainable practices and underscores the close spiritual connection between the community and their environment.

However, with increasing deforestation, mining, and modernization, much of this traditional knowledge is at risk. The younger generations are slowly moving away from forest-based lifestyles, and the oral transmission of ethnobotanical knowledge is

weakening. Documenting and studying the plants of the Chechari Valley and their uses by the local tribes is not only crucial for preserving biodiversity but also for safeguarding cultural heritage. Researchers and conservationists need to collaborate with tribal communities to record this invaluable knowledge before it disappears.

3. LITERATURE REVIEW

Singh Rao, Amrender et al., (2021) Medicinal plants have always played a significant role in basic healthcare as a source of medicines. The knowledge of how to use plants is typically passed down through generations or learned from personal experience, although it is seldom recorded in writing. One region that has a wealth of ethno medical expertise is South Haryana.

Pandey, Abhishek. (2021) New Raipur, also known as Atal Nagar, is located 30 km outside of Raipur in the Indian state of Chhattisgarh. From October 2017 to December 2018, an ethnobotanical research examined the medicinal plant variety in the area. This ethnobotanical research drew on local tribespeople's ethnobotanical knowledge of the plants in their area using semi-structured interviews that made use of participatory rural appraisal (PRA) and rapid rural appraisal methodologies.

Ritumala, W et al., (2019) Among the 71 plant species documented in this research, 59 have traditional medicinal uses. Some 31 tree species, 16 shrub species, and 24 herb species were identified among the 71 ethno botanical plant species. A total of thirty illnesses were treated using the 59 ethno medicinal plant species. The majority of cases had issues with the digestive system, skin, and stomach. There were fifteen plant species utilized for digestive and stomach issues, and thirteen for skin disorders. The majority of the species that were gathered were used in the food industry.

Dar, Pervaiz et al., (2018) The knowledge, beliefs, customs, and practices of the diverse groups living in a certain geographical area with its own distinct biodiversity are reflected in ethnomedical practices. There has been a sea shift in how people throughout the world see herbal medicine as a consequence of recent technical advancements. These days, there is a heightened emphasis on studying the active principles of poly-herbal formulations alongside the research and development of

physio-pharmaceuticals. The ever-increasing biopiracy concerns have introduced a new obstacle, making it imperative to document and validate ethnomedicinal techniques. Worldwide, traditional medicine enjoys broad support, and 70% of the global population relies on it to treat a variety of illnesses, according to the World Health Organization.

Ansari, Iqbal et al., (2017) Traditional and contemporary medicine both recognize the value of medicines produced from plants. The medicinal plant biodiversity in Jharkhand is exceptional. Of Jharkhand's overall landmass, forests occupy over 40%. In various parts of Jharkhand, one may find 32 distinct tribal groups, the most prominent of which are the Munda, Santhal, Oraon, Kharia, Gond, Kol, Kanwar, and Savar. Based on their long-held expertise, they are making use of therapeutic herbs. In the absence of modern medical facilities, these indigenous populations rely on over 160 plant species for therapeutic purposes.

Murtem, Ganguva & Chaudhry, Pradeep. (2016). Finding and cataloguing the economically and ethnobotanically significant plants of India's Upper Subansiri area was the primary goal of the research. In the Upper Subansiri area of the Indian state of Arunachal Pradesh, the Tagin, Hill Miri (now Nyshi), and Galo peoples practice what is essentially "traditional medicine" by using a variety of herbs found in the surrounding woods to treat common ailments. Methods used to compile the ethnobotanical data included surveys of local aboriginals, research at herbaria and museums, analysis of folklore, rituals, and beliefs, and a survey of local markets. For this study, we randomly picked the villages that were inhabited by the tribesmen.

Dhyani, Sandeep & Wani, Zishan. (2015) The field known as ethnobotany investigates the ties that bind humans to various plant species. The field of ethnobotany seeks to record the invaluable plant-related knowledge of indigenous communities. The indigenous inhabitants of the area have developed their own special methods of using plants, mostly for medicinal reasons.

Bano, Abida et al., (2014) The indigenous people of Pakistan's Skardu valley occupy a region rich in flora and fauna that is unique to their region. Information on the

medicinal plant's usage and the first quantified ethnomedicinal spectrum of the valley are presented in this research. The purpose of this article is to compile and examine this information using the Pearson correlation coefficient configuration, as well as the Use Value (UV) and Relative Frequency Citation (RFC) of medicinal herbs. In six outlying areas of the valley, researchers conducted semi-structured interviews with 71 informants over the course of two years (2011–2013). The majority of the informants were in their 50s and 70s.

Kumari, S. et al., (2013) In rural locations, especially among indigenous tribes, plants have a crucial role as a source of medicine. The Gujjar people of India's Jammu and Kashmir state undertook an ethnobotanical study of the medicinal plants they utilize in the Trikuta hills, an underexplored region of the country. The majority of the information on the medicinal plants was collected from local residents and traditional healers via surveys, as well as formal and informal conversations during the many field excursions that were conducted. There were seventy plant species recorded in the study region, representing forty-three distinct taxonomic groups.

Singh, Sanjai & Prasad, Mahesh. (2011) The presence of four species—Sweitenia mahogani Linn., Dysoxylum procerum Hiem. (Meliaceae), OpWa amentacea Roxb. (Opiliaceae), and Rhamnus purpurea Edgew. (Rhamnaceae)—was discovered through a systematic study of leaf impressions obtained from the Late Tertiary sediments of Mahuadanr Valley, Latehar District, Jharkhand.

Sher, Zaman et al., (2010) A total of 216 kinds of plants were studied in Pakistan's Chagharzai Valley, District Buner, using ethnobotanical methods. Traditional medical and commercial purposes led to the classification of these plants

Singh, Sanjai & Prasad, Mahesh. (2010) Research using fossil leaf assemblages from the Mahuadanr Valley's Late Tertiary strata has uncovered two new Dicotyledon species: Ziziphus funiculosa (Rhamnaceae) and Lagerstroemia macrocarpa (Lythraceae). This type of forest was likely abundant in and around the fossil site during sedimentation, since modern-day distribution of these fossil species is

indicative of their current distribution in the wet deciduous forests of northeastern, central, and southern India.

Singh, Sanjai & Prasad, Mahesh. (2010). This study examines dicot leaf impressions found in the Late Tertiary sediments of Mahuadanr Valley and finds new species of fossi I leaves that are related to existing ones, such as Sterculia versicolor Wall. (Sterculiaceae), Grewia salvi/olia Heyne (Tiliaceae), Aegle mannelos Correa (Rutaceae), Desmodillm cephalotus Wall., D. gangeticillm DC., Millettia pilbinervis Kurz (Fabaceae), and Lagerstroemia parvij70ra Roxb. (Lythraceae). Distribution of modern-day fossil species suggests that the fossil site was surrounded by mixed deciduous forests during sedimentation.

Singh, Sanjai & Prasad, Mahesh. (2009). This study aims to analyze the plant fossils found in the Late Tertiary strata of Mahuadanr Valley in order to draw conclusions about the palaeoclimate and phytogeography of the area during that time. Based on the current distribution of similar species, it can be inferred that the majority of the fossil assemblage's similar species are still present in the area around the fossil site. This suggests that the same vegetation has been there since sedimentation and that the region has not experienced significant climate change since the Late Tertiary.

Kadhirvel, K et al., (2009) To learn more about the medicinal plants utilized by the Malayali people in their villages in the forest region of the Chitteri Hills in the Dharmapuri district of Tamil Nadu, India, researchers performed an ethnobotanical study. Using a combination of botanical collections and interview schedules, this research presents information acquired from tribal informants, including practitioners. Two tribal practitioners were among the twelve informants questioned, whose ages ranged from thirty to sixty-eight.

Ali, Haidar & Qaiser, M.. (2009). In order to learn more about the therapeutic plants and their many traditional applications in the Chitral valley, researchers conducted an ethnobotanical study. Reports indicate that 83 taxa are used for different reasons on a local level. According to our findings, the majority of the recipes call for root

vegetables. The majority of the recipes call for decoctions made from freshly picked plant components.

Singh, Sanjai & Prasad, Mahesh. (2008). Leaf impressions from the Late Tertiary strata of the Mahuadanr Valley in Jharkhand, India, have been analyzed morphotaxonomically. Thirteen species belonging to five dicotyledonous families were identified by morphological comparisons between fossils and living plants. This collection has allowed us to infer the Late Tertiary phytogeography and palaeoclimate of the Mahuadanr region. Species that are similar to these fossils today are thought to inhabit tropical forests in central and southern India, as well as the surrounding region of the Mahuadanr Valley.

4. OBJECTIVE (S) /NEED OF THE STUDY

1. To document the traditional knowledge of medicinal and useful plants among tribal communities of the Chechari Valley, Mahuadanr.
2. To identify and classify plant species used by tribes for food, medicine, rituals, and other cultural practices.
3. To assess the current status and availability of commonly used ethnobotanical plants in the region.
4. To analyze the methods of preparation, administration, and dosage of traditional remedies.
5. To explore the potential threats to indigenous knowledge systems and recommend strategies for its conservation and sustainable use.

NEED OF THE STUDY

The need for the study of plants used by the tribes of the Chechari Valley in Mahuadanr, Latehar district, will become increasingly important in the future due to the rapid loss of traditional knowledge and biodiversity. As modernization and deforestation continue to impact tribal regions, the valuable ethnobotanical practices

passed down through generations will face the threat of extinction. Future research will aim to preserve this indigenous knowledge system, which will hold immense potential for natural medicine, sustainable living, and environmental conservation. This study will also be crucial for identifying plant species that could contribute to future healthcare solutions, especially as interest in herbal and alternative medicines continues to grow globally. Documenting the uses of medicinal and edible plants will help in creating a database that can be referred to by researchers, conservationists, and policy-makers. Furthermore, such research will empower tribal communities by recognizing their contribution to biodiversity and traditional science, potentially leading to future livelihood opportunities through eco-tourism, herbal product development, and sustainable forest practices. The study will ensure that this traditional wisdom is not only preserved but also integrated into modern practices for the benefit of future generations.

5. PROPOSED METHODOLOGY

The proposed ethnobotanical study will be conducted in the Chechari Valley region of Mahuadanr, located in the Latehar district of Jharkhand. This area is predominantly inhabited by tribal communities, including the Oraon, Munda, Korwa, Brijia and Asur tribes, who have traditionally depended on local flora for their healthcare, livelihood, and cultural practices. The methodology will aim to explore and document the indigenous knowledge related to the use of plants by these communities.

Primary data will be collected through extensive fieldwork using qualitative methods such as semi-structured interviews, group discussions, and participant observations. Tribal elders, traditional healers (vaidyas), and community members with botanical knowledge will be the main informants. A purposive sampling technique will be adopted to select informants who possess deep knowledge of medicinal and ethnobotanical plant use. Oral consent will be obtained from all participants, and ethical considerations will be strictly followed to respect indigenous intellectual property rights.

The plant specimens identified during the study will be collected, photographed, and properly documented for herbarium preparation. Botanical identification will be carried out using regional floras and verified with the help of local botanists and herbariums. Data will be recorded in terms of local name, scientific name, family, part used, method of preparation, and the ailment it is used for.

The information collected will be analyzed to understand the cultural significance, usage patterns, and conservation status of various plant species. Further, an attempt will be made to evaluate the risk of knowledge erosion due to modern influences and lack of documentation. Geographical Information Systems (GIS) may also be used in future phases of the study to map the biodiversity and plant distribution within the valley.

This study will contribute to the preservation of traditional knowledge systems and support the development of sustainable resource management practices in the region. The findings may also serve as a baseline for future pharmacological research and ethnobotanical conservation efforts.

6. EXPECTED OUTCOMES

The expected outcomes of this study on the plants used by the tribes of the Chechari Valley in Mahuadanr will contribute significantly to the fields of ethnobotany, conservation, and indigenous knowledge preservation. The study will likely result in the documentation of a wide range of plant species used for food, medicine, rituals, and daily life by the local tribal communities. This data will serve as a valuable resource for future researchers, healthcare practitioners, and conservationists interested in natural and sustainable solutions. The findings will also help in raising awareness about the cultural and ecological importance of tribal knowledge systems, which are often overlooked in mainstream scientific research. The study will promote the protection of these native plant species and will support conservation efforts by highlighting their role in both biodiversity and traditional lifestyles. Additionally, it is expected that the study will encourage collaboration between scientists and tribal communities, leading to community-based conservation and development programs.

Furthermore, the study may open up future opportunities for the sustainable use of these plants in herbal medicine, agriculture, and local entrepreneurship. By documenting and validating traditional practices, the research will pave the way for integrating indigenous knowledge into modern sustainable development strategies.

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